

Amendment to the Claims

1. (Currently Amended) A multi-axis chuck comprising:
a first portion including a substrate receiving surface;
a second portion operatively coupled to the first portion; ~~and~~
a third portion operatively coupled to the second portion; and
at least one motor that rotates the first portion and the second portion about a cutting region,

wherein the first portion is rotatable substantially about a first axis and the second portion is rotatable substantially about a second axis the second axis orthogonal to the first axis.

2. (Currently Amended) The multi-axis chuck of claim 1, further comprising:
a first degree scale located on one of the first portion and the second portion~~that indicates a number of degrees of rotation of the first portion about the cutting region;~~ and
a first degree indicator located on the other of the first portion and second portion that indicates on the first degree scale a number of degrees of rotation of the first portion about the cutting region.

3. (Cancelled)

4. (Original) The multi-axis chuck of claim 2, further comprising:
a second degree scale located on one of the second portion and the third portion ~~that indicates a number of degrees of rotation of the first portion and the second portion about the cutting region;~~ and

a second degree indicator located on the other of the second portion and third portion that indicates on the second degree scale a number of degrees of rotation of the first portion and the second portion about the cutting region.

5. (Cancelled)

6. (Currently Amended) The multi-axis chuck of claim 1, further comprising:

a first mating portion located along at least part of ~~a second plane~~ one side of the first portion that is substantially parallel to the first axis; and

a second mating portion located along at least a part of one side of the second portion that is substantially parallel to the first axis, wherein the first mating portion mates with the second mating portion,

wherein the first mating portion comprises a protruding curved track and the second mating portion comprises a recessed curved track.

7. (Cancelled)

8. (Currently Amended) The multi-axis chuck of claim 6, further comprising:

a third mating portion located along at least part of a second side of the second portion that is parallel to the second axis; and

a fourth mating portion located along at least part of one side of the third portion that is parallel to the second axis, wherein the third mating portion mates with the fourth mating portion,

wherein the third mating portion comprises a protruding curved track and the fourth mating portion comprises a recessed curved track.

9-11. (Cancelled)

12. (Currently Amended) The multi-axis chuck of claim 1 ~~[[11]]~~, further comprising at least one sensor that senses at least one position of the first portion and the second portion.

13. (Original) The multi-axis chuck of claim 12, further comprising a controller that enables a user to rotate the first portion and the second portion about the cutting region using the at least one motor.

14. (Original) The multi-axis chuck of claim 13, wherein the controller stores a zero position for the first portion and the second portion and rotates the first portion and the second portion until the at least one sensor senses the zero position upon receiving a zero position command from the user.

15. (Original) The multi-axis chuck of claim 14, wherein the controller stores at least one position for the first portion and the second portion.

16. (Original) The multi-axis chuck of claim 13, wherein the controller enables the user to return the first portion and the second portion to the at least one position.

17. (Cancelled)

18. (Cancelled)

19. (Currently Amended) The multi-axis chuck of claim 1, ~~further comprising a~~ wherein the substrate receiving surface is adapted to receive a tissue specimen.

20. (Cancelled)

21. (Cancelled)

22. (Original) The multi-axis chuck of claim 1, wherein the first axis and the second axis intersect at a substantially fixed location adjacent the substrate receiving surface.

23. (Original) The multi-axis chuck of claim 1, wherein the first axis and the second axis intersect at a substantially fixed location on the substrate receiving surface.

24-29. (Cancelled)

30. (New) A multi-axis microtome chuck, comprising:

a first portion including a tissue receiving surface configured to receive a tissue specimen, the tissue receiving surface being disposed at least partially within a cutting region;

a second portion operatively coupled to the first portion; and

a third portion operatively coupled to the second portion,

wherein the first portion is rotatable substantially about a first axis and the second portion is rotatable substantially about a second axis, wherein the second axis is substantially orthogonal to the first axis.

31. (New) The multi-axis microtome chuck of claim 30, further comprising:

a first degree scale located on an exposed surface of one of the first portion and the second portion; and

a first degree indicator located substantially adjacent to the first degree scale on an exposed surface of the other of the first portion and the second portion that indicates a number of degrees of rotation of the first portion about the first axis relative to the second portion.

32. (New) The multi-axis microtome chuck of claim 31, further comprising:

a second degree scale located on an exposed surface of one of the second portion and the third portion; and

a second degree indicator located substantially adjacent to the second degree scale on an exposed surface of the other of the second portion and the third portion that indicates a number of degrees of rotation of the second portion about the second axis relative to the third portion.

33. (New) The multi-axis microtome chuck of claim 30, wherein the first portion includes a first curved mating surface that is curved substantially about the first axis and is configured to slidably abut a second curved mating surface of the second portion that is curved substantially about the second axis.

34. (New) The multi-axis microtome chuck of claim 33, wherein a protruding portion of the first curved mating surface is slidably received within a curved recessed track of the second curved mating surface.

35. (New) The multi-axis microtome chuck of claim 33, wherein the second portion includes a third curved mating surface that is curved substantially about the second axis and is configured to slidably abut a fourth curved mating surface of the third portion that is curved substantially about the second axis.

36. (New) The multi-axis microtome chuck of claim 35, wherein a protruding portion of the third curved mating surface is slidably received within a curved recessed track of the fourth curved mating surface.

37. (New) The multi-axis microtome chuck of claim 30 further comprising at least one motor configured to rotate the first portion and the second portion about the cutting region.

38. (New) The multi-axis microtome chuck of claim 37 further comprising at least one sensor that senses at least one position of the first portion and the second portion.

39. (New) The multi-axis microtome chuck of claim 30 further comprising a locking mechanism configured to lock the first portion and the second portion such that relative rotation is prevented therebetween.

40. (New) The multi-axis microtome chuck of claim 39, wherein the locking mechanism is a solenoid.

41. (New) The multi-axis microtome chuck of claim 30, wherein the first axis and the second axis intersect at a substantially fixed location adjacent the tissue receiving surface.

42. (New) The multi-axis microtome chuck of claim 30, wherein the first axis and the second axis intersect at a substantially fixed location on the tissue receiving surface.

43. (New) A multi-axis chuck comprising:
a first portion having an axis of rotation, a substrate receiving surface and a convex cylindrical mating surface that is curved about the axis of rotation;

a second portion having an axis of rotation, a concave cylindrical mating surface that is curved about the axis of rotation of the first portion and slidably abuts the convex cylindrical mating surface of the first portion, and a convex cylindrical mating surface that is curved substantially about the axis of rotation of the second portion; and

a third portion having a concave cylindrical mating surface that is curved about the axis of rotation of the second portion and slidably abuts the convex cylindrical mating surface of the second portion.

44. (New) The multi-axis chuck of claim 43, wherein the convex cylindrical mating surface of the first portion is parallel to the concave cylindrical mating surface of the second portion, and wherein the convex cylindrical mating surface of the second portion is parallel to the concave cylindrical mating surface of the third portion.

45. (New) The multi-axis chuck of claim 43, further comprising:

a first degree scale located on an exposed surface of one of the first portion and the second portion; and

a first degree indicator located substantially adjacent to the first degree scale and on an exposed surface of the other of the first portion and the second portion that indicates a magnitude of rotation of the first portion relative to the second portion.

46. (New) The multi-axis chuck of claim 45, wherein the first degree scale is located on the second portion and the first degree indicator is located on the first portion.

47. (New) The multi-axis chuck of claim 45, further comprising:

a second degree scale located on an exposed surface of one of the second portion and the third portion; and

a second degree indicator located substantially adjacent to the second degree scale and on an exposed surface of the other of the second portion and the third portion that indicates a magnitude of rotation of the second portion relative to the third portion.

48. (New) The multi-axis chuck of claim 47, wherein the second degree scale is located on the third portion and the second degree indicator is located on the second portion.